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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,343	04/15/2004	Jong Shik Yoon	TI 37043	8658

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TEXAS INSTRUMENTS INCORPORATED
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EXAMINER

NGUYEN, THANH T

ART UNIT	PAPER NUMBER
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2813

NOTIFICATION DATE	DELIVERY MODE
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05/14/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com
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Office Action Summary

Application No.

10/825,343

Applicant(s)

YOON ET AL.

Examiner

Thanh T. Nguyen

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 4a) Of the above claim(s) 3-5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1, 6 7 have been considered but are moot in view of the new ground(s) of rejection.

Election/Restrictions

Claims 3-5 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected specie, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/8/07.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandelman et al. (U.S. Patent No. 2003/0032272) in view of an ordinary skill in the requisite art.

Regarding to claim 1, Mandelman et al. teaches a method of manufacturing a Metal Oxide Semiconductor (MOS) transistor, comprising:

forming an active area (12/14) in a substrate (10), wherein said active area (12/14) is bounded by an isolation structure (16, fig. 1); and

placing at least one stress adjustor adjacent said active area (12/14), wherein said stress adjustor (area located between trenches 16, it is noted that the same structure would provide the same function) is positioned to modify a mobility of a majority carrier within a channel region of said MOS transistor, wherein placing said stress adjustor includes removing portions of said silicon substrate to form at least two trenches (16, see figure 1), wherein a portion of said silicon substrate (10) remaining between said at least two trenches forms said stress adjustor and filling said trenches with a material comprising said isolation structure (see figure 1, paragraph# 26), wherein said stress adjustor (located between 2 trenches) and a first of said at least two trenches (16) are located between a portion of a second of said at least two trenches (16) and said active area (12/14).

Regarding to claims 6-7, the stress adjustor is configured to decrease a compressive stress imparted from the isolation structure to the channel region (reference teach same structure and material hence it would inherently provide the same result of decreasing/increasing compressive stress imparted from isolation structure to the channel region).

Mandelman et al. do not clearly recite stress adjustor. However, the region between the trenches (16) has the same material and the same structure as the instant invention describe. Hence, it is obvious that is stress adjustor.

Claims 1, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murthy et al. (U.S. Patent No. 7,129,139) in view of an ordinary skill in the requisite art.

Regarding to claim 1, a method of manufacturing a Metal Oxide Semiconductor (MOS) transistor, comprising:

forming an active area (106/108/110) in a substrate (100), wherein said active area (106/108/110) is bounded by an isolation structure (112, fig. 1b); and

placing at least one stress adjustor adjacent said active area (106/108/110), wherein said stress adjustor (area located between trenches 112, it is noted that the same structure would provide the same function) is positioned to modify a mobility of a majority carrier within a channel region of said MOS transistor, wherein placing said stress adjustor includes removing portions of said silicon substrate to form at least two trenches (112, see figure 1b), wherein a portion of said silicon substrate (100) remaining between said at least two trenches forms said stress adjustor and filling said trenches with a material comprising said isolation structure (see figure 1b), wherein said stress adjustor (located between 2 trenches) and a first of said at least two trenches (112) are located between a portion of a second of said at least two trenches (112) and said active area (106/108/110).

Regarding to claims 6-7, the stress adjustor is configured to decrease a compressive stress imparted from the isolation structure to the channel region (reference teach same structure and

material hence it would inherently provide the same result of decreasing/increasing compressive stress imparted from isolation structure to the channel region).

Murthy do not clearly recite stress adjustor. However, the region between the trenches (16) has the same material and the same structure as the instant invention describe. Hence, it is obvious that is stress adjustor.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Nguyen whose telephone number is (571) 272-1695, or by Email via address Thanh.Nguyen@uspto.gov. The examiner can normally be reached on Monday-Thursday from 6:00AM to 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached on (571) 272-1702. The fax phone number for this Group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pairedirect.uspto.gov>. Should you have questions on access to thy Private PAIR system, contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).



Thanh Nguyen
Patent Examiner
Patent Examining Group 2800